Section 10.0 - Exponentials and Logarithms

Instructions

Please work all homework questions and clearly label / place your answers in the boxes (or parenthesis) provided. If you have questions, please feel free to email me at Joshua.Patterson@tamuc.edu

1. Question Details JModd7 10.0A.001. [1666806] 
   Find the value of \( v \).
   \[ v = \log_9 36 \]
   \( v = \)

2. Question Details JModd7 10.0A.004. [1666735] 
   Find the value of \( v \).
   \[ v = \log_2 \frac{1}{2} \]
   \( v = \)

3. Question Details JModd7 10.0A.005.CMI. [1666805] 
   Find the value of \( u \).
   \[ \log_2 u = 4 \]
   \( u = \)

4. Question Details JModd7 10.0A.007. [1666817] 
   Find the value of \( u \).
   \[ \log_5 u = 0 \]
   \( u = \)

5. Question Details JModd7 10.0A.008. [1666825] 
   Find the value of \( u \).
   \[ \log_5 u = 1 \]
   \( u = \)
6. Find the value of \( b \).
   \[ \log_b 4 = 2 \]
   \[ b = \]  

7. Find the value of \( b \).
   \[ \log_b 25 = -2 \]
   \[ b = \]  

8. Rewrite the logarithm as an exponential equation. (Use capital letters for variables \( P \) and \( Q \).)
   \[ P = \log_b Q \]

9. Rewrite the exponential equation as a logarithm. (Use capital letters for variables \( U \) and \( Y \).)
   \[ b^U = Y \]

10. Use a calculator to find each value. (Round your answers to eight decimal places.)
    (a) \( e^{1.5} \)
    \[ \]
    (b) \( 10^{1.5} \)
    \[ \]

11. Use a calculator to find each value. (Round your answers to eight decimal places.)
    (a) \( 3e^{0.07} \)
    \[ \]
    (b) \( 3(10^{0.07}) \)
    \[ \]

12. Use a calculator to find each value. (Round your answers to eight decimal places.)
    (a) \( \frac{1}{e^{2.5}} \)
    \[ \]
13. Use a calculator to find each value. (Round your answers to eight decimal places.)
   (a) \( \frac{e^{0.074}}{7e^{0.061}} \)
   (b) \( \frac{10^{0.074}}{7(10^{0.061})} \)

14. Use a calculator to find each value. (Round your answers to eight decimal places.)
   (a) \( \ln 2.15 \)
   (b) \( \log 2.15 \)

15. Use a calculator to find each value. (Round your answers to eight decimal places.)
   (a) \( \ln(e^{3.2}) \)
   (b) \( \log(10^{3.2}) \)

16. Use a calculator to find each value. (Round your answers to eight decimal places.)
   (a) \( \ln(4e^{4.4}) \)
   (b) \( \log \left( 4(10^{4.4}) \right) \)

17. Use a calculator to find each value. (Round your answers to eight decimal places.)
   (a) \( e^{\ln 3.7} \)
   (b) \( 10^{\log 3.7} \)
18. Question Details

Use a calculator to find each value. (Round your answers to eight decimal places.)

(a) \( e^6 \ln 2 \)

(b) \( 10^6 \log 2 \)

19. Question Details

Use a calculator to find each value. (Round your answers to eight decimal places.)

(a) \( \ln(5) \)

(b) \( \ln(5^2) \)

(c) \( \ln(5^3) \)

20. Question Details

Put the following in numerical order, from smallest to largest: \( e^{2.7}, \ln 2.7, 10^{2.7}, \log 2.7 \).

(smallest value)

(largest value)